

GIS REGISTRY INFORMATION

SITE NAME: BAAP Box Wash Repair Site
BRRTS #: 02-57-550214 **FID # (if appropriate):** _____
COMMERCE # (if appropriate): _____
CLOSURE DATE: 24-Oct-2007
STREET ADDRESS: 2 Badger road
CITY: Baraboo

SOURCE PROPERTY GPS COORDINATES (meters in WTM91 projection): X= 541060 Y= 321486

CONTAMINATED MEDIA: Groundwater Soil Both

OFF-SOURCE GW CONTAMINATION >ES: Yes No

IF YES, STREET ADDRESS 1: _____
GPS COORDINATES (meters in WTM91 projection): X= _____ Y= _____

IF YES, STREET ADDRESS 2: _____
GPS COORDINATES (meters in WTM91 projection): X= _____ Y= _____

OFF-SOURCE SOIL CONTAMINATION >Generic or Site-Specific RCL (SSRCL): Yes No

IF YES, STREET ADDRESS 1: _____
GPS COORDINATES (meters in WTM91 projection): X= _____ Y= _____

CONTAMINATION IN RIGHT OF WAY: Yes No

DOCUMENTS NEEDED:

- Closure Letter, and any conditional closure letter or denial letter issued
- Copy of most recent deed, including legal description, for all affected properties NA
- Certified survey map or relevant portion of the recorded plat map (if referenced in the legal description) for all affected properties NA
- County Parcel ID number, if used for county, for all affected properties NA
- Location Map which outlines all properties within contaminated site boundaries on USGS topographic map or plat map in sufficient detail to permit the parcels to be located easily (8.5x14" if paper copy). If groundwater standards are exceeded, the map must also include the location of all municipal and potable wells within 1200' of the site. X
- Detailed Site Map(s) for all affected properties, showing buildings, roads, property boundaries, contaminant sources, utility lines, monitoring wells and potable wells. (8.5x14", if paper copy) This map shall also show the location of all contaminated public streets, highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination exceeding ch. NR 140 ESs and soil contamination exceeding ch. NR 720 generic or SSRCLs. X
- Tables of Latest Groundwater Analytical Results (no shading or cross-hatching) NA
- Tables of Latest Soil Analytical Results (no shading or cross-hatching) X
- Isoconcentration map(s), if required for site investigation (SI) (8.5x14" if paper copy). The isoconcentration map should have flow direction and extent of groundwater contamination defined. If not available, include the latest extent of contaminant plume map. NA
- GW: Table of water level elevations, with sampling dates, and free product noted if present NA
- GW: Latest groundwater flow direction/monitoring well location map (should be 2 maps if maximum variation in flow direction is greater than 20 degrees) NA
- SOIL: Latest horizontal extent of contamination exceeding generic or SSRCLs, with one contour NA
- Geologic cross-sections, if required for SI. (8.5x14" if paper copy) X
- RP certified statement that legal descriptions are complete and accurate NA
- Copies of off-source notification letters (if applicable) NA
- Letter informing ROW owner of residual contamination (if applicable)(public, highway or railroad ROW) NA
- Copy of (soil or land use) deed restriction(s) or deed notice if any required as a condition of closure NA
- Copy of any maintenance plan referenced in the deed restriction. NA



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Lloyd L. Eagan, Regional Director

South Central Region Headquarters
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Telephone 608-275-3266
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October 24, 2007

Ms. Joan Kenney, Installation Director
Badger Army Ammunition Plant
2 Badger Road
Baraboo, WI 53913-5000

Subject: Site Closure Approval for the BAAP – Box Wash Repair Site Case; Sauk County; BRRTS
Number 02-57-550214

Dear Ms. Kenney:

On October 23, 2007, the South Central Region Closure Committee reviewed your request for closure of the case described above for a second time, after denying closure for this site on September 26, 2007. The closure committee reviews environmental remediation cases for compliance with state rules and statutes to maintain consistency in the closure of these cases. Based on the correspondence and data provided, it appears that your case meets the requirements of ch. NR 726, Wisconsin Administrative Code. The Department considers this case closed and no further investigation or remediation is required at this time.

The site will be listed on the DNR Remediation and Redevelopment GIS Registry of Closed Remediation Sites for remaining contaminated soil. Information that was submitted with the closure request application will be included on the GIS Registry. To review the sites on the GIS Registry web page, visit <http://dnr.wi.gov/org/aw/tr/gis/index.htm>

Please be aware that this case may be reopened, pursuant to s. NR 726.09, Wis. Adm. Code, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety or welfare, or the environment.

If you have any questions regarding this letter, please contact me at the address listed above or as indicated below.

Sincerely,

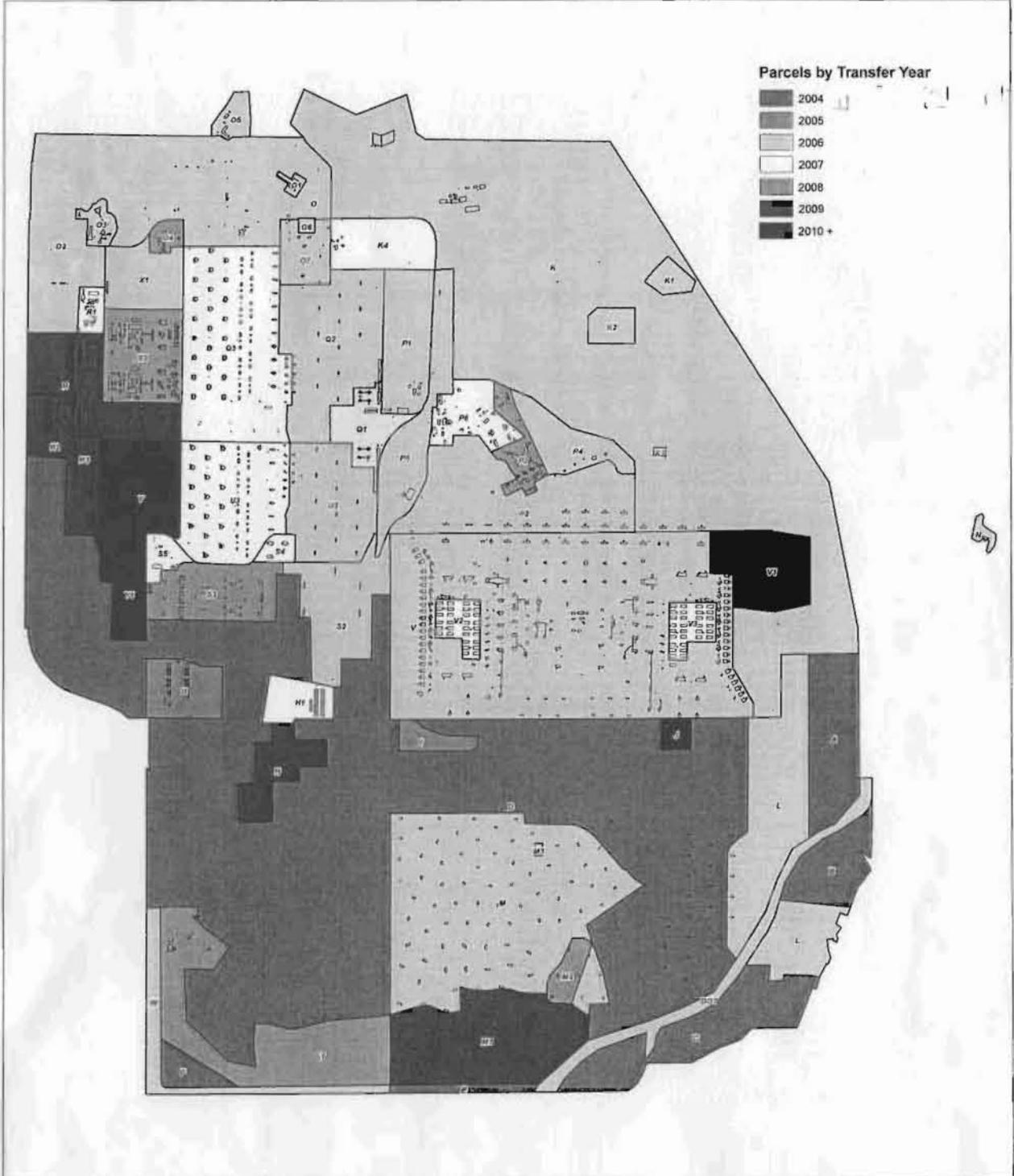
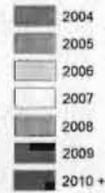
Hank Kuehling, P.G.
Remediation & Redevelopment Program Hydrogeologist
608-275-3286
harlan.kuehling@wisconsin.gov

cc: Joel Janssen – SpecPro, Inc.
Clair Ruenger SpecPro, Inc.
Laura Olah – CSWAB

Badger Army Ammunition Plant Parcels by Transfer Year

H.K.

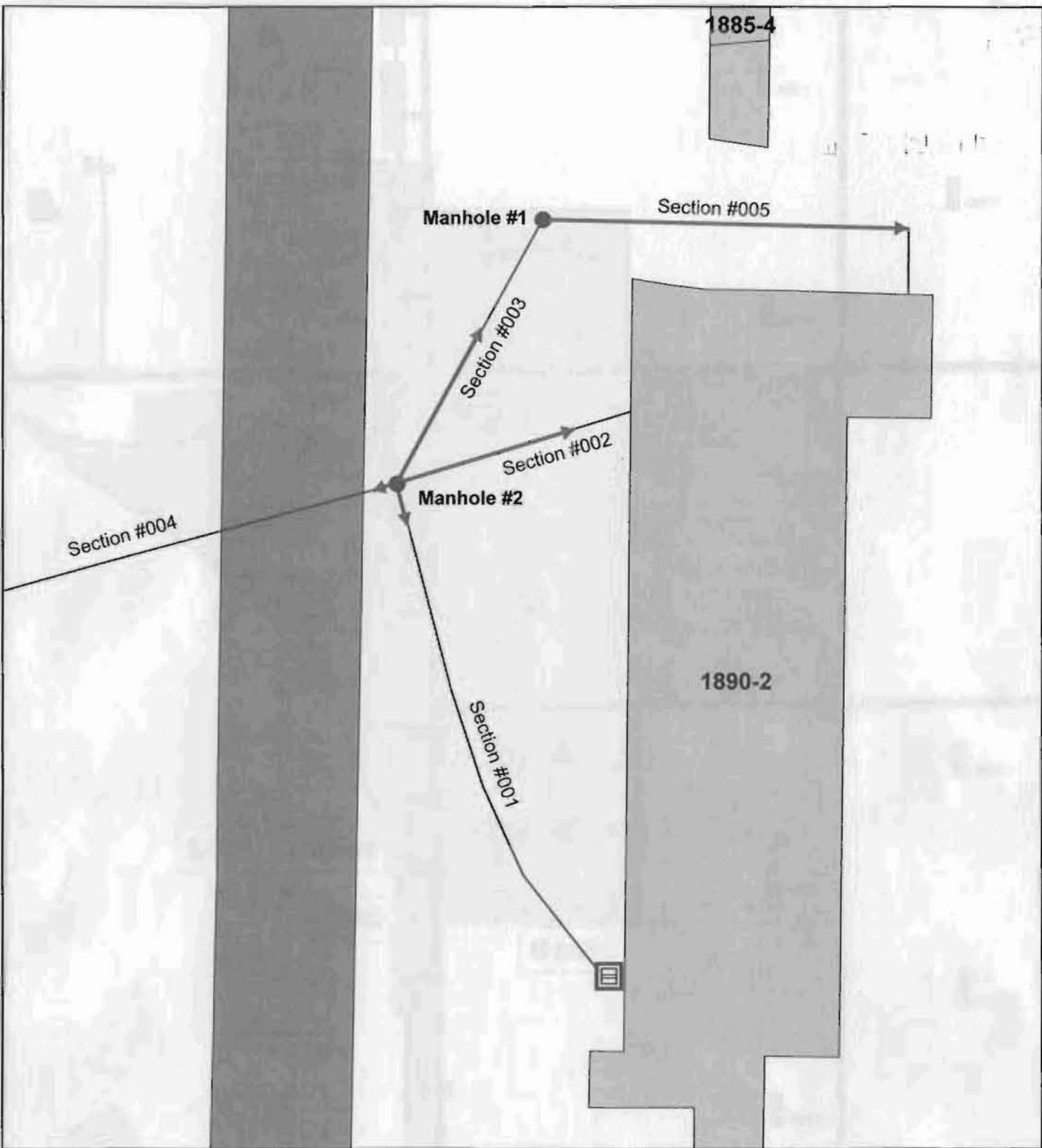
Parcels by Transfer Year



Transfer Year	Parcel	Description	Acres	
Transfer 2004	Parcel A	North River Corridor Buffer	87.91	
	Parcel B	South River Corridor Buffer	55.05	
	Parcel C	Southwest Corner	118.33	
	Parcel D	North and East Magazines	1790.86	
	Parcel E	South Buffer	12.24	
	Parcel F	Southwest Corner	20.12	
	Transfer 2006	Parcel G	Concentration Club Area	44.73
		Parcel H	Leach 87 Arms	16.67
		Parcel I	Leach 87 Arms	61.40
		Parcel J	DOT Right of Way	52.31
Parcel K		Northwest Corner	1123.33	
Parcel L		Leach 88 Arms	12.31	
Parcel M		Entirement Barring Ground	77.25	
Parcel N		Wood Duck Pond	1.35	
Parcel O		River Corridor	189.23	
Parcel P		North Magazines	400.80	
Transfer 2007	Parcel Q	Thawing Conveyance	1.00	
	Parcel R	River Pump	4.45	
	Parcel S	Northwest Corner	367.14	
	Parcel T	Field Road	2.85	
	Parcel U	Miller Conveyance	0.03	
	Parcel V	Ballistics Range	17.84	
	Parcel W	Calibration Range	18.03	
	Parcel X	Former Conveyance	2.58	
	Parcel Y	Wood Duck Pond	22.86	
	Parcel Z	Former Storage Area	21.75	
Transfer 2008	Parcel AA	Rockwell Pallet Area	163.20	
	Parcel AB	Rockwell Pallet Area	42.24	
	Parcel AC	Ballistics Range	27.25	
	Parcel AD	Ballistics Range	145.75	
	Parcel AE	Ballistics Range	90.49	
	Parcel AF	Ballistics Range	89.41	
	Parcel AG	Ballistics Range	627.45	
	Parcel AH	Ballistics Range	47.43	
	Parcel AI	Ballistics Range	51.84	
	Parcel AJ	Open Space	3277.00	
Transfer 2009	Parcel AK	Change Houses	29.47	
	Parcel AL	Ballistics Range	55.22	
	Parcel AM	New Acid & New NG	43.57	
	Parcel AN	Ballistics Range	40.26	
	Parcel AO	Ballistics Range	211.78	
	Parcel AP	Ballistics Range	12.82	
	Parcel AQ	Ballistics Range	130.77	
	Parcel AR	Ballistics Range	9.81	
	Parcel AS	Ballistics Range	15.71	
	Parcel AT	Ballistics Range	32.45	
Transfer 2010 +	Parcel AU	Ballistics Range	23.18	
	Parcel AV	Ballistics Range	594.75	
	Parcel AW	Ballistics Range	17.95	
	Parcel AX	Ballistics Range	10.28	
	Parcel AY	Ballistics Range	28.20	
	Parcel AZ	Ballistics Range	1.01	
	Parcel BA	Ballistics Range	164.01	
	Parcel BB	Ballistics Range	75.27	
	Parcel BC	Ballistics Range	78.41	
	Parcel BD	Ballistics Range	17.95	

SpecPro
Badger GIS/Mapping Services
Plot Date: 1/27/06



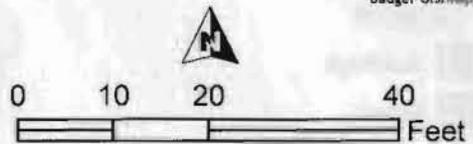


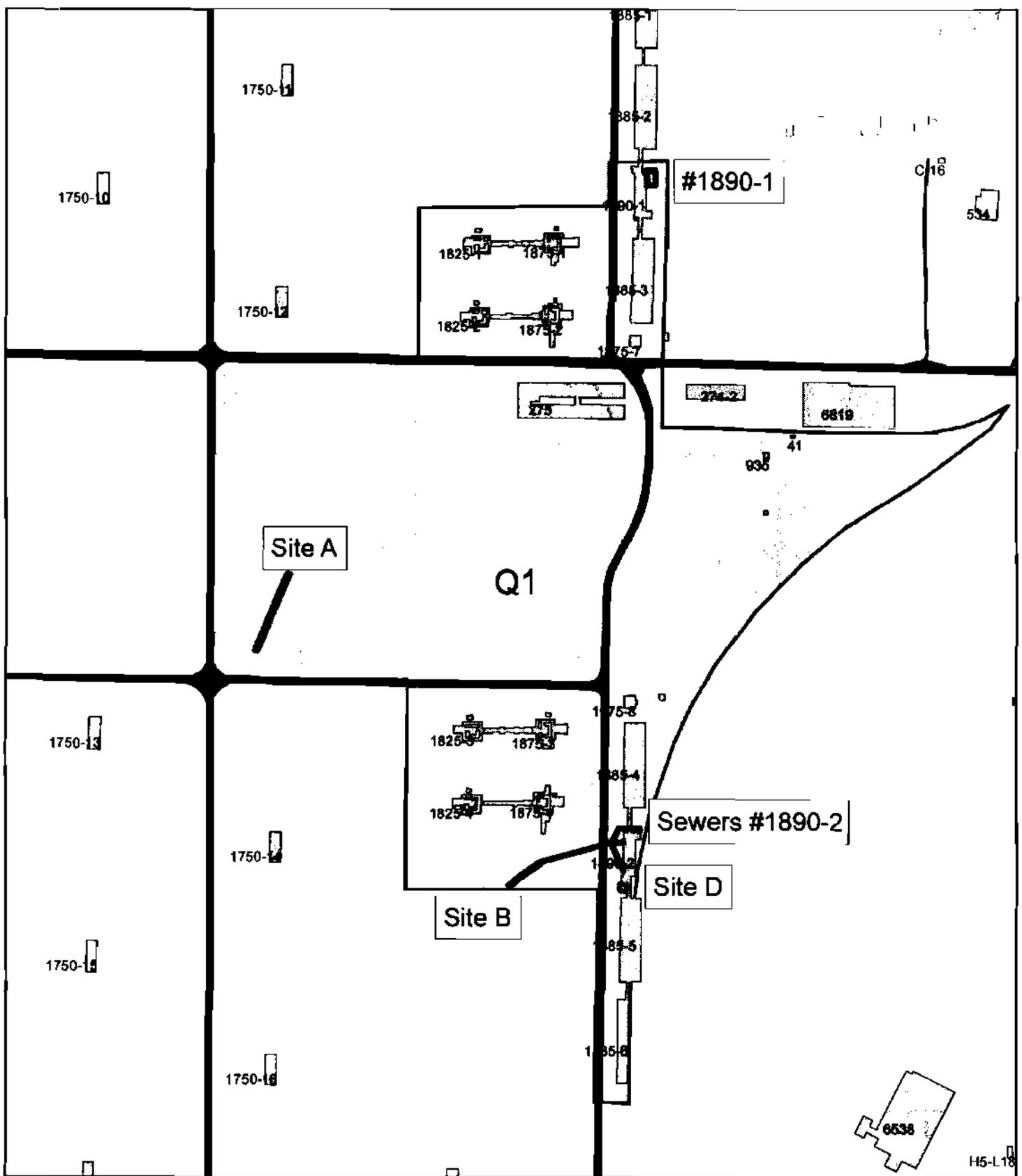
Legend

-  Process Sewer Manhole
-  Process Sewer Piping (6" dia.)
-  Length of Process Sewer Inspection
-  Building Slab
-  Paved Road
-  Catch Basin

Figure 2

Sewer Video Inspection (Account #1890-2)



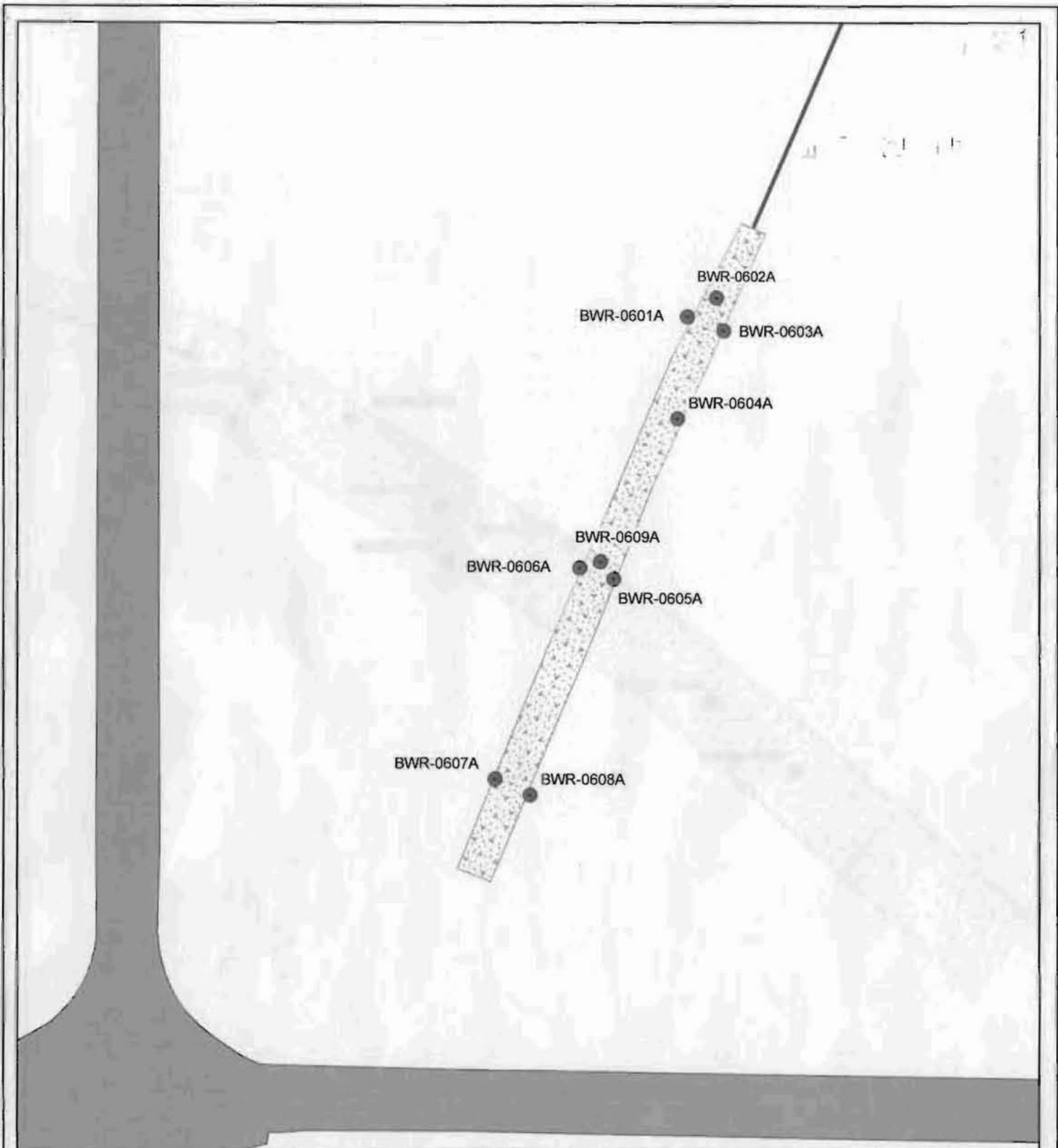


Legend

-  Buildings
-  Roads
-  Excavation Boundary
-  Parcel Q1

Figure 1
Box Wash Repair
Site Locations





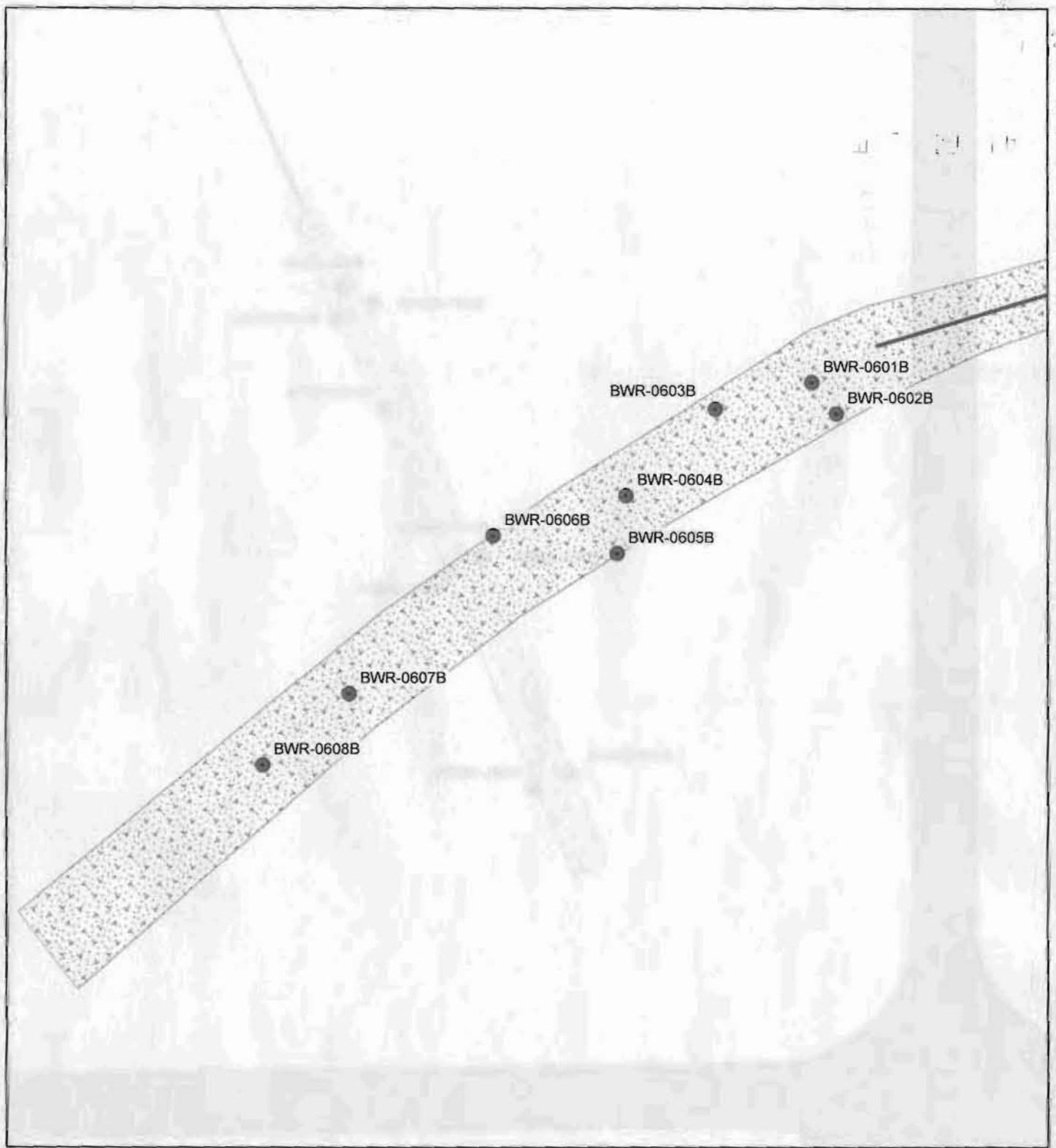
Legend

- Soil Borings
- ▨ Excavation Boundary
- Paved Road
- Process Sewer Pipe

Figure 3

Site A - Location of Soil Borings and Sample Collection Points



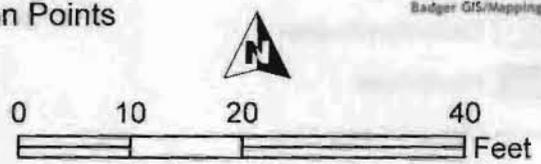


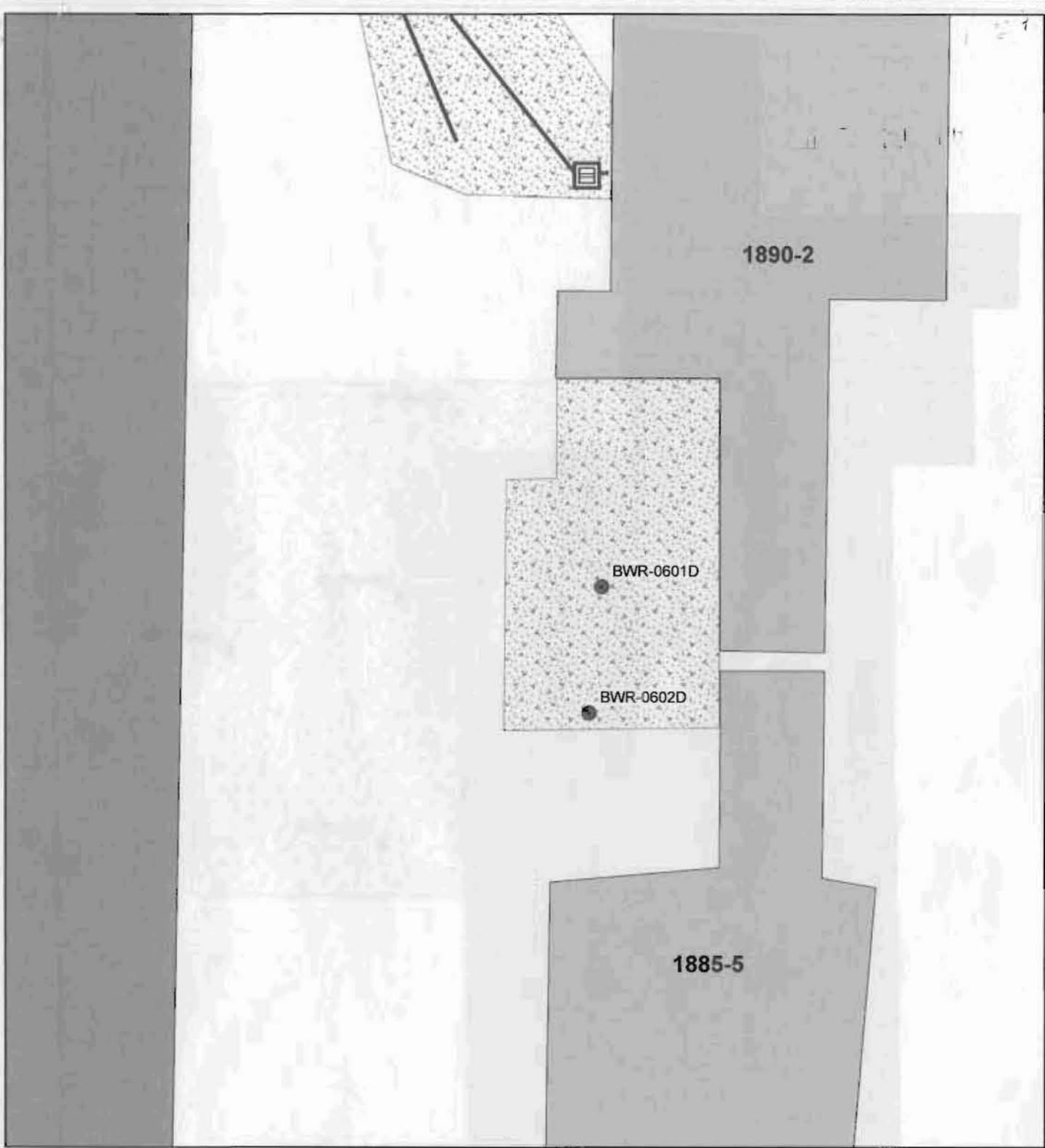
Legend

- Soil Borings
- ▨ Excavation Boundary
- Process Sewer Pipe

Figure 4

Site B - Location of Soil Borings
and Sample Collection Points



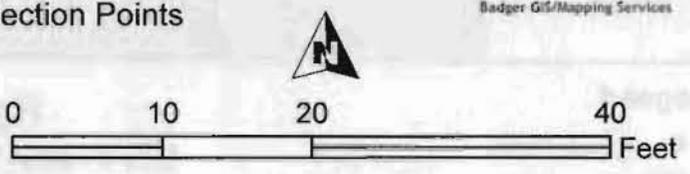


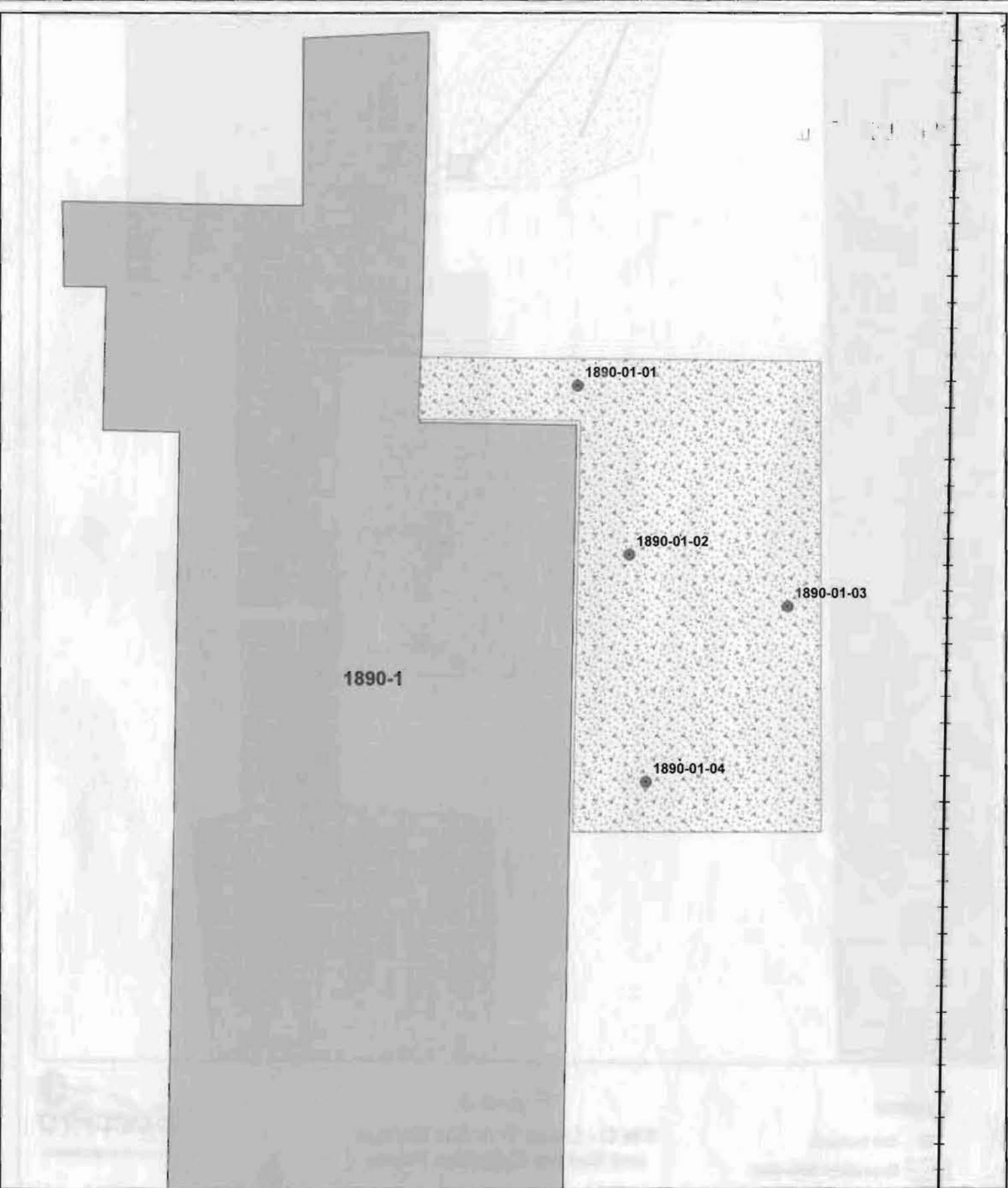
Legend

- Soil Borings
- ▨ Excavation Boundary
- Building Slab
- Paved Road
- Process Sewer Pipe
- ▩ Catch Basin

Figure 5

Site D - Location of Soil Borings and Sample Collection Points





Legend

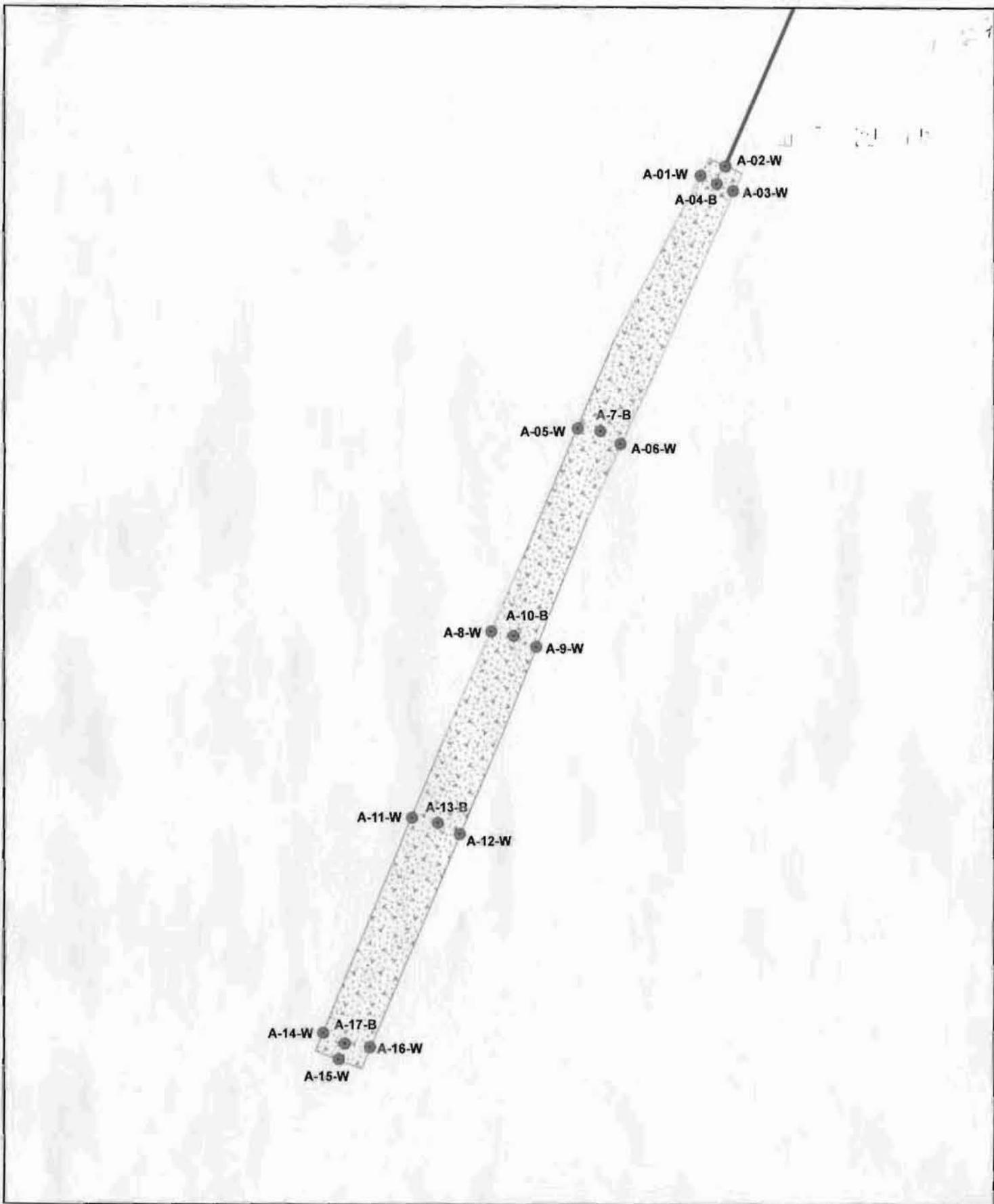
- Sample Points
- ▨ Excavation Boundary
- Building Slab
- +— Railroad

Figure 6
Site #1890-1 - Extent of Soil
Excavation and Soil Sample Locations





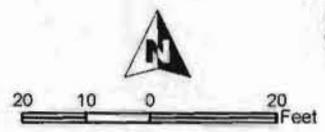


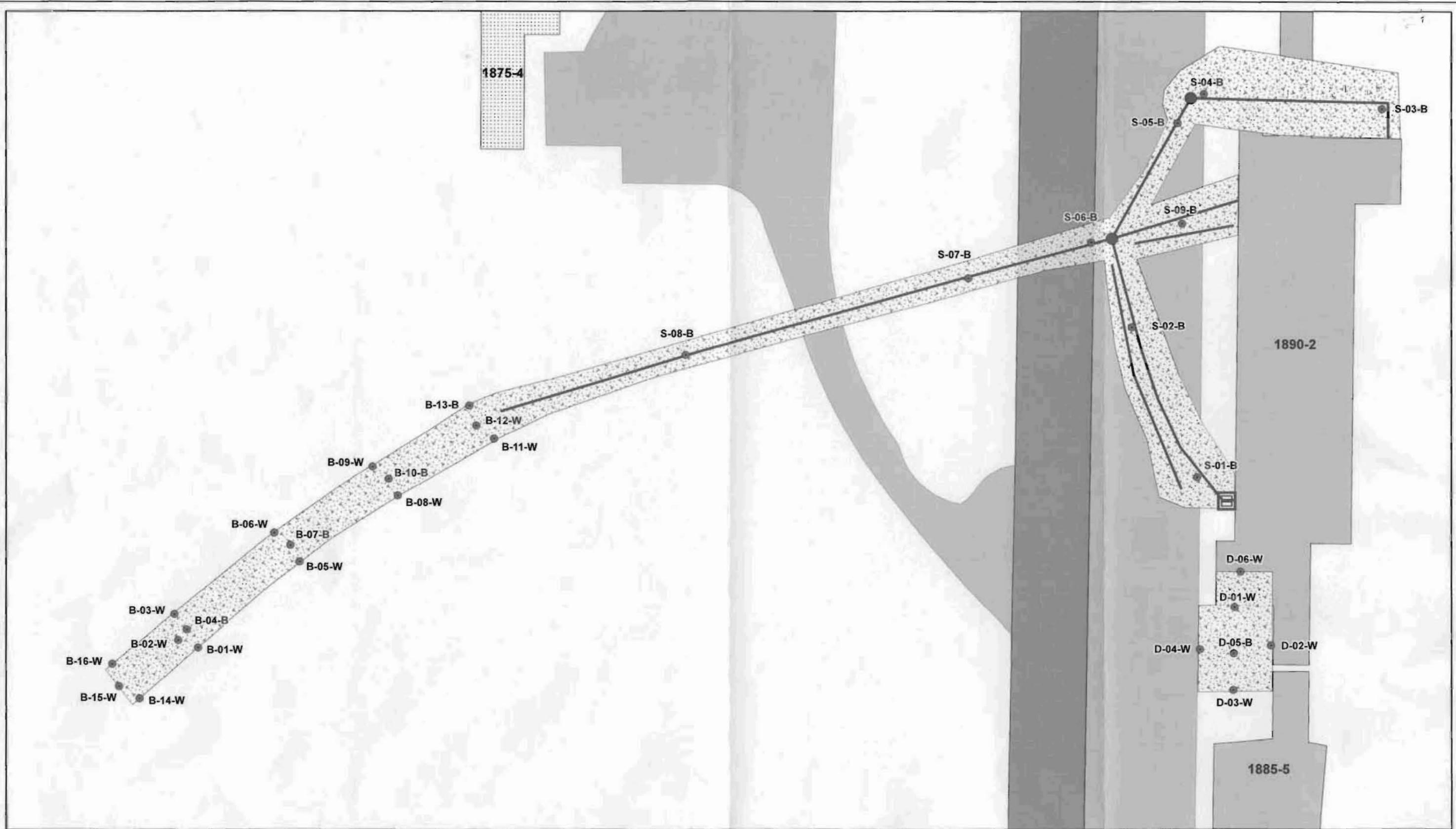


Legend

- Sample Points
- Process Sewer Main
- ▨ Excavation Boundary

Figure 7
 Site A - Extent of Soil Excavation
 and Soil Sample Locations





Legend

- | | | | |
|-----------------------|-------------------------|------------------|-----------------|
| ● Sample Points | Utilities | Buildings | Pavement |
| ▨ Excavation Boundary | ● Process Sewer Manhole | ▨ Existing | ▨ Roads |
| | — Process Sewer Main | ▨ Demolished | ▨ Parking |
| | ▨ Catch Basin | ▨ Slab Only | |

Figure 8
 Site B - Site D - Sewers - Extent of Soil
 Excavation and Soil Sample Locations



TABLE 13
SUMMARY OF DETECTED COMPOUNDS AT OR ABOVE
PRELIMINARY REMEDIATION GOALS

Sample	Compound	Result	Units	Qualifier	Residential	Industrial
Area A - Box Wash Soil Investigation						
BWB-0502-002	Aroclor-1254	3.1	mg/kg		0.22	0.74
BWB-0546-002	Aroclor-1254	3	mg/kg		0.22	0.74
BWB-0547-002	Aroclor-1254	4.4	mg/kg		0.22	0.74
BWB-0548-002	Aroclor-1254	1	mg/kg		0.22	0.74
BWB-0549-002	Aroclor-1254	1.7	mg/kg		0.22	0.74
Area B - Box Wash Soil Investigation						
BWB-0504-002	Aroclor-1254	1.2	mg/kg	JH1	0.22	0.74
BWB-0504-002	Nitroglycerine	74	mg/kg	JH6	35	120
BWB-0504-002	Lead	556	mg/kg	JS0	400	800
BWB-0505-002	Aroclor-1254	0.43	mg/kg	JH1	0.22	0.74
BWB-0505-002	Nitroglycerine	41	mg/kg	JH6	35	120
BWB-0518-002	Aroclor-1260	1.8	mg/kg	JH9	0.22	0.74
BWB-0518-002	Nitroglycerine	35	mg/kg	JH5	35	120
BWR-0401	Benzene	5.970	mg/kg	SL	0.64	1.4
BWR-0401	Dibenz(a,h) anthracene	0.420	mg/kg	SL	0.062	0.21
BWR-0402	Benzene	3.520	mg/kg		0.64	1.4
Area C - Box Wash Soil Investigation						
BWB-0525-004	Benzo(a)pyrene	76	µg/kg		62	210
Area D - Box Wash Soil Investigation						
BWB-0528-004	Aroclor-1254	0.72	mg/kg		0.22	0.74
BWB-0528-006	Aroclor-1254	0.22	mg/kg		0.22	0.74
BWB-0529-004	Aroclor-1254	0.35	mg/kg		0.22	0.74
BWB-0529-006	Aroclor-1254	0.97	mg/kg		0.22	0.74
BWB-0531-006	Aroclor-1254	0.43	mg/kg		0.22	0.74

Notes:

Values in the Residential and Industrial columns are USEPA Region 9 preliminary remediation goals (PRG, in milligrams per kilogram or micrograms per kilogram).

mg/kg milligram per kilogram

µg/kg microgram per kilogram

JS# Sample is qualified based on low sample recover where # is the recovery observed.

JH# Sample is biased low due to holding time exceedance where # is the number of days the holding time was exceeded.

SL Surrogate recovery was below the lower control limit.

Table 1
 Summary of Laboratory Detections
 Soil Boring Analytical Results
(to determine areas to be excavated)

See Figure 3
(Site A)

See Figure 4
(Site B)

		Depth (inches)	Date Sampled	Benzene	Diphenylamine	Di-n-butyl phthalate	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Ethyl Ether	Lead (total)	Lead TCLP	Nitroglycerin	PCB-1254	PCB-1260	Toluene
Sample Identification	BWR-0602A-6	6	10/25/06	NS	NS	NS	NS	NS	NS	NS	NS	NS	3.36	ND	NS
	BWR-0605A-48	48	10/25/06	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	0.195	NS
	BWR-0602B-6	6	10/26/06	ND	ND	0.05	ND	ND	ND	ND	NS	ND	ND	ND	ND
	BWR-0602B-48	48	10/26/06	ND	ND	0.04	ND	ND	ND	NS	NS	ND	ND	ND	ND
	BWR-0603B-6	6	10/26/06	0.56	1.81	12.8	0.86	0.04	0.92	ND	NS	94.3	ND	ND	0.19
	BWR-0604B-48	48	10/26/06	ND	0.14	1.64	ND	ND	ND	NS	NS	0.340	ND	ND	ND
	BWR-0605B-6	6	10/26/06	ND	ND	0.18	ND	ND	ND	ND	NS	ND	ND	ND	ND
	BWR-0605B-48	48	10/26/06	ND	ND	0.26	ND	ND	ND	NS	NS	ND	ND	ND	ND
	BWR-0606B-6	6	10/26/06	ND	ND	0.31	ND	ND	ND	ND	NS	ND	ND	ND	ND
	BWR-0608B-6	6	10/26/06	NS	ND	0.20	ND	ND	NS	ND	NS	1.98	ND	ND	NS
Regulatory Limits	WAC NR 720 Residential Standards for Direct Contact			NA	NA	NA	NA	NA	NA	50	NA	NA	NA	NA	NA
	WAC NR 720 Industrial Standards for Direct Contact			NA	NA	NA	NA	NA	NA	250	NA	NA	NA	NA	NA
	Region 9 PRGs Residential Standards for Direct Contact			0.64	1500	NA	120	61	NA	400	NA	35	0.22	0.22	520
	Region 9 PRGs Industrial Standards for Direct Contact			1.4	15000	NA	1200	6200	NA	800	NA	120	0.74	0.74	520

Bolded values exceed a regulatory standard
 All values are units of milligrams-per-kilogram (mg/Kg)
 NA = Not Available
 NS = Not Sampled
 PCB = Polychlorinated Biphenyl
 TCLP = Toxicity Characteristic Leaching Procedure
 WAC = Wisconsin Administrative Code
 PRG = Environmental Protection Agency Preliminary Remediation Goal

Note: This table presents detectable laboratory results only. Twenty-three additional samples were analyzed, however, laboratory results were below the level of detection.

Table 2
Summary of Laboratory Detections
Soil Excavation Analytical Results

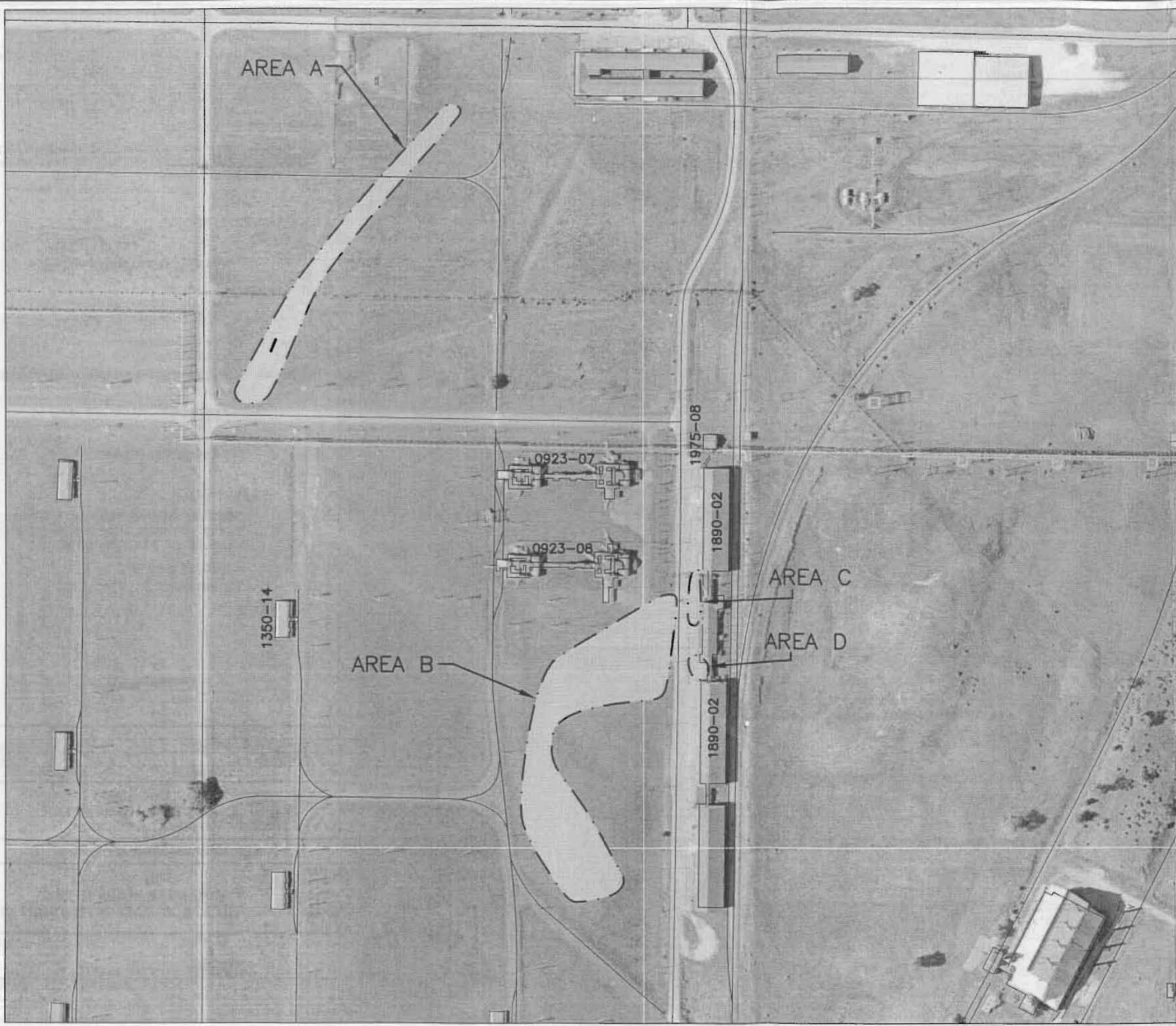
Sample Identification	Depth (feet)	Date Sampled	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (ghi) perylene	Benzo (a) pyrene	Benzo (a,h,i) phtalate	Chrysene	Dibenz (a,h) anthracene	Diethyl phtalate	Diphenylamine	Di-n-butyl phtalate	2,4-Dimethyl phenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Fluoranthene	Indeno (1,2,3-cd) pyrene	Lead (total)	Nitrolycerin	PCB-1254	PCB-1260	Pyrene	Pyridine
A-01-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	0.0986	ND	0.16
A-02-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.53(B)	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
A-03-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04(B)	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
A-04-B	4	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21(B)	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
A-08-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06(B)	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
A-10-B	4	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04(B)	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
A-16-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.98(B)	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
B-01-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.108(B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-02-W	2	5/14/07	ND	ND	ND	ND	0.042	ND	ND	ND	0.694	5.08(B)	ND	2.24	0.14	ND	ND	ND	3.30	ND	0.0780	ND	ND
B-03-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.585(B)	ND	ND	ND	ND	ND	ND	0.277	ND	ND	ND	ND
B-04-B	4.5	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.055(B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-06-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.087(B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-07-B	4.5	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.052(B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-08-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.080(B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-09-W	2	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	0.093	0.915(B)	ND	ND	ND	ND	ND	ND	2.38	ND	ND	ND	ND
B-10-B	5	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.066(B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-15-W	2	6/27/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.080	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
D-01-W	5.5	5/15/07	ND	ND	ND	ND	ND	ND	ND	0.08(B)	ND	0.06(B)	ND	ND	ND	ND	ND	NS	NS	5.28	ND	ND	0.09
D-02-W	4	5/15/07	ND	ND	ND	ND	ND	ND	ND	0.05(B)	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	ND
D-03-W	4	5/15/07	ND	ND	ND	ND	ND	ND	ND	0.04(B)	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	ND
Pipe Sludge*		5/14/07	0.51	0.13	0.35	0.59	1.34	0.12	0.11	ND	0.18	4.35(B)	0.14	ND	ND	ND	0.42	NS	NS	NS	NS	ND	ND
S-02-B	4	5/14/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	ND	0.10
S-03-B	5	5/15/07	0.07	ND	ND	ND	ND	0.05	ND	ND	0.04	0.36(B)	ND	ND	ND	0.08	ND	NS	NS	NS	NS	0.05	ND
S-06-B	5	5/15/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12(B)	ND	ND	ND	ND	ND	NS	NS	NS	NS	ND	ND
S-07-B	5	5/15/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03(B)	ND	ND	ND	ND	ND	NS	NS	NS	NS	ND	ND
S-08-B	5	5/15/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23(B)	ND	ND	ND	ND	ND	NS	NS	NS	NS	ND	ND
Regulatory Limits			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250	NA	NA	NA	NA	NA
			0.62	6.2	NA	0.062	35	62	0.062	49000	1500	NA	1200	120	61	2300	0.62	400	35	0.22	0.22	2300	61
			2.1	21	NA	0.21	120	210	0.21	100000	15000	NA	12000	1200	620	22000	2.1	800	120	0.74	0.74	29000	620

See Figure 7
Site A

See Figure 8
Site B &
Site D

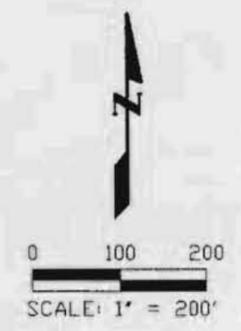
Folded values exceed a regulatory standard
All values are units of milligrams-per-kilogram (mg/kg)
*Samples taken from the interior of process sewer pipe at account #1890-2
(B) = analyte present in laboratory blank
NA = Not Available
NS = Not Sampled
PCB = Polychlorinated Biphenyl
TCLP = Toxicity Characteristic Leaching Procedure
WAC = Wisconsin Administrative Code
PRG = Environmental Protection Agency Preliminary Remediation Goal
Note: This table presents detectable laboratory results only. Thirty additional samples were analyzed, however, laboratory results were below the level of detection.

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NOTE
 1. BUILDING 1890-01 IS LOCATED APPROXIMATELY 1000 FT TO THE NORTH OF BUILDING 1890-02.

LEGEND
 GENERAL LOCATION OF BOX WASH REPAIR SUBSURFACE SOIL INVESTIGATION AREAS A, B, C, AND D.
 1890-02 BAAAP BUILDING NUMBER



REVISION	DESCRIPTION	CHECKED	APPROVED	DATE
B	ISSUED TO ARMY AND AGENCIES	ABE	DJR	09/07/05
A	ISSUED TO ARMY	ABE	DJR	08/10/05

 **U.S. ARMY
CORPS OF ENGINEERS
OMAHA DISTRICT**

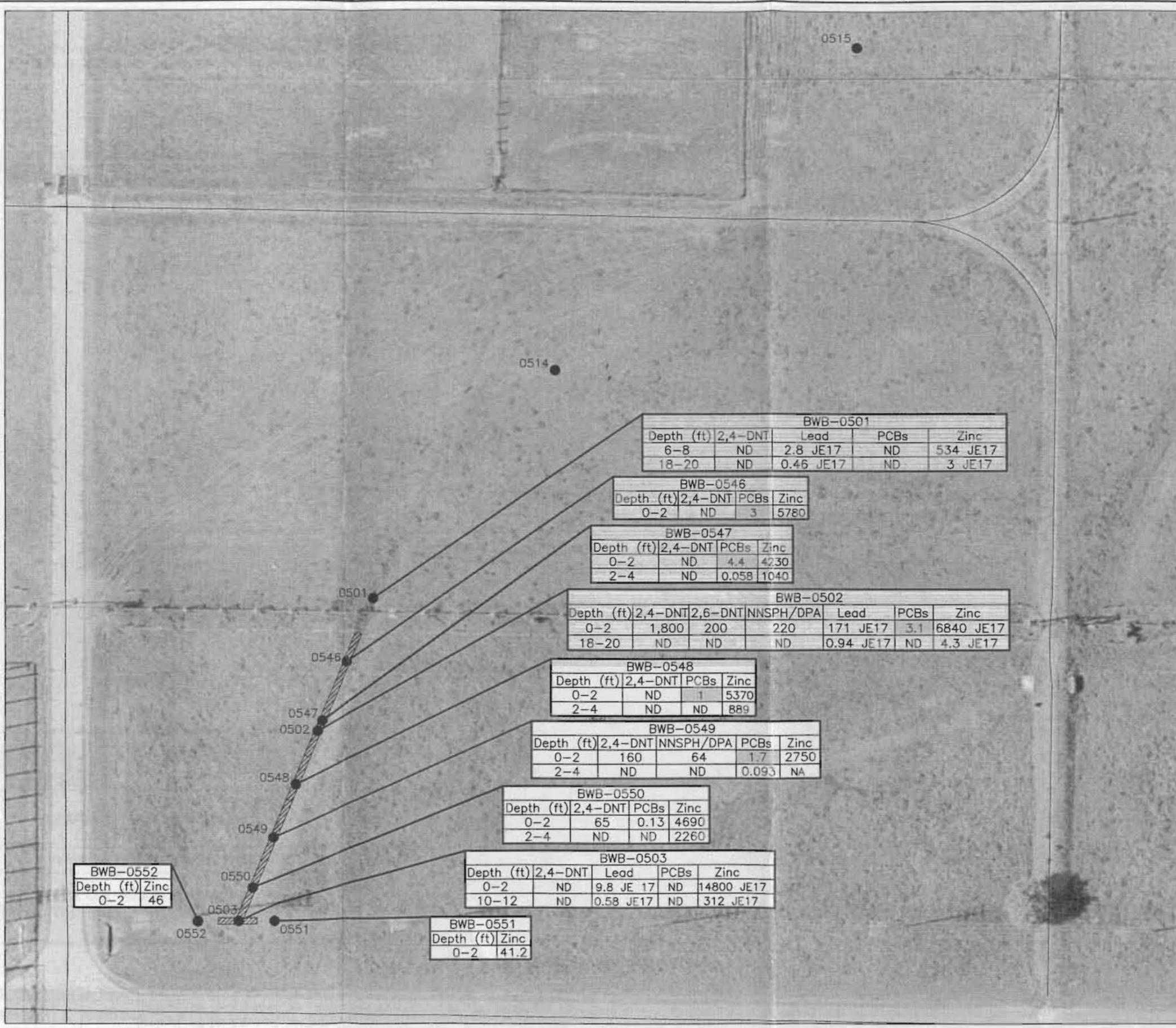
BADGER ARMY AMMUNITION PLANT

FIGURE NUMBER
1
**BOX WASH REPAIR
SUBSURFACE SOIL INVESTIGATION AREAS**

 **Shaw Environmental, Inc.**

BY	DATE	BY	DATE	PROJECT NO.	REV.	FILE NAME
DSND	ABE	06/10/05	CHKD	ABE	07/19/05	843333.0530
DRAWN	MEC	06/10/05	APPR	DJR	07/19/05	B 3333H01B

WED, SEP 07, 2005 10:29 A MEC C:\BADGER\843333\11-0530\REV. B\3333H01B.DWG



NOTES

1. SAMPLE LOCATION NOMENCLATURE: SAMPLE LOCATION NAMES CONSIST OF A THREE LETTER PREFIX (BWB, SIGNIFYING A SOIL BORING IN THE BOX WASH REPAIR AREA) FOLLOWED BY 05##, WHERE 05 SIGNIFIES THE YEAR THE BORING WAS PERFORMED AND ## IS THE UNIQUE LOCATION IDENTIFIER.
2. SHADED VALUE INDICATES COMPOUND CONCENTRATION EXCEEDS U.S. EPA REGION 9 PRELIMINARY REMEDIATION GOAL FOR SOILS. SEE TABLE 13 FOR DETAILS.

LEGEND

- 0514 SOIL BORING
- ▨ ESTIMATED EXTENT OF IMPACTED SOILS

ANALYTES REPORTED IN µg/kg

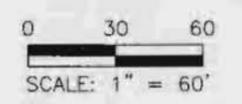
- 2,4-DNT 2,4-DINITROTOLUENE
- 2,6-DNT 2,6-DINITROTOLUENE
- NNSPH/DPA N-NITROSODIPHENYLAMINE/DIPHENYLAMINE

ANALYTES REPORTED IN mg/kg

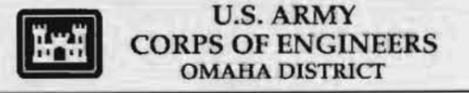
- Lead
- PCBs POLYCHLORINATED BIPHENYLS
- Zinc

QUALIFIERS

- JE# SERIAL DILUTION PERCENT DIFFERENCE OUT OF CONTROL LIMITS WHERE # IS VALUE OF PERCENT DIFFERENCE
- ND NOT DETECTED
- NA NOT ANALYZED

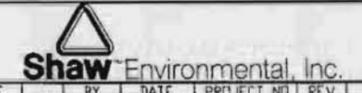


B	ISSUED TO ARMY AND AGENCIES	ABE	DJR	09/08/05
A	ISSUED TO ARMY	ABE	DJR	08/10/05
REVISION	DESCRIPTION	CHECKED	APPROVED	DATE



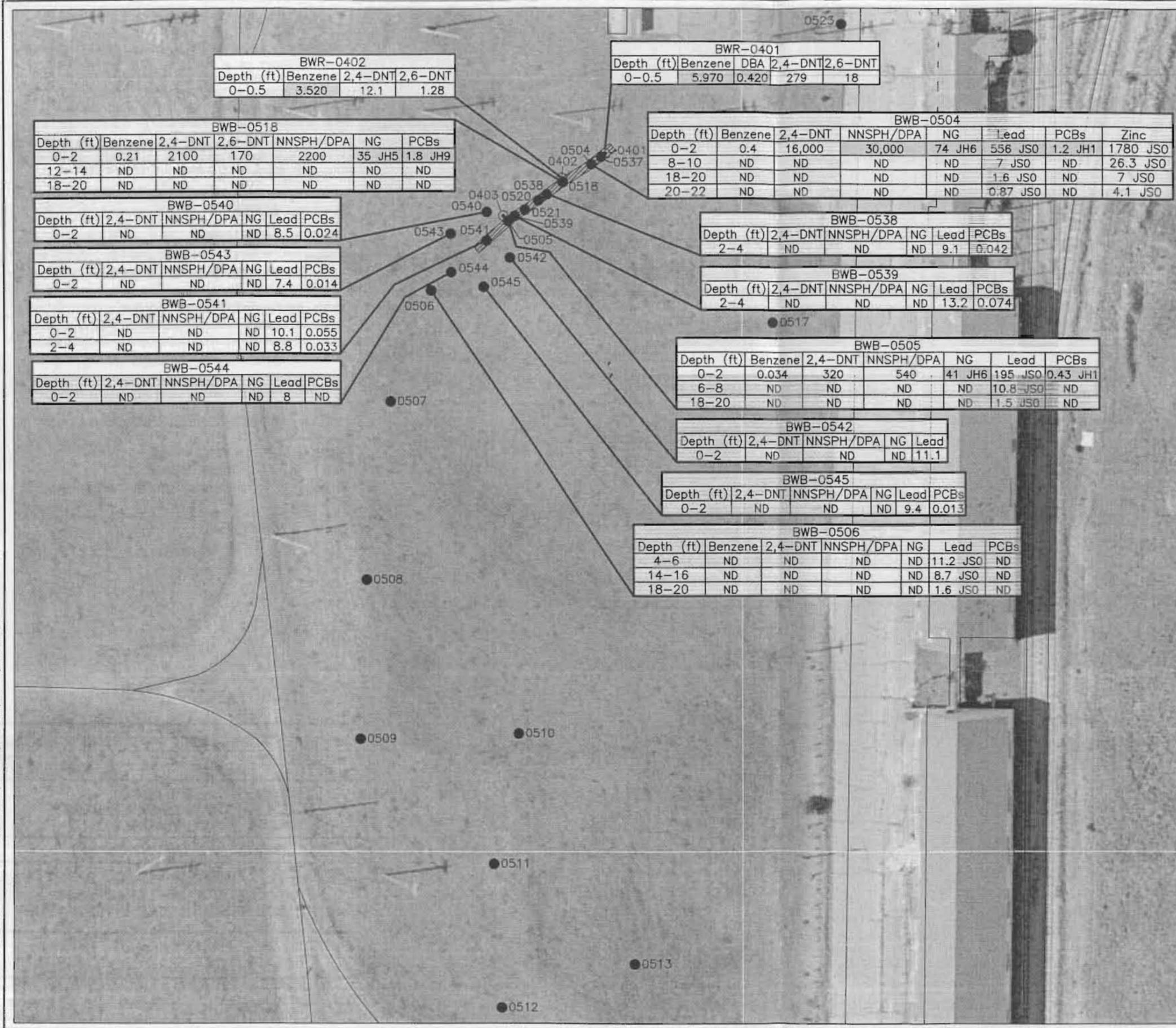
BADGER ARMY AMMUNITION PLANT

FIGURE NUMBER	2
AREA A BOX WASH REPAIR AREA SUBSURFACE SOIL INVESTIGATION	



BY	DATE	BY	DATE	PROJECT NO.	REV.	FILE NAME
DSND	ABE	06/10/05	CHKD	ABE	07/19/05	843333.0530
DRAWN	MEC	06/10/05	APPR	DJR	07/19/05	B 3333H01B

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BWR-0402			
Depth (ft)	Benzene	2,4-DNT	2,6-DNT
0-0.5	3.520	12.1	1.28

BWR-0401				
Depth (ft)	Benzene	DBA	2,4-DNT	2,6-DNT
0-0.5	5.970	0.420	279	18

BWB-0518						
Depth (ft)	Benzene	2,4-DNT	2,6-DNT	NNSPH/DPA	NG	PCBs
0-2	0.21	2100	170	2200	35 JH5	1.8 JH9
12-14	ND	ND	ND	ND	ND	ND
18-20	ND	ND	ND	ND	ND	ND

BWB-0504							
Depth (ft)	Benzene	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs	Zinc
0-2	0.4	16,000	30,000	74 JH6	556 JS0	1.2 JH1	1780 JS0
8-10	ND	ND	ND	ND	7 JS0	ND	26.3 JS0
18-20	ND	ND	ND	ND	1.6 JS0	ND	7 JS0
20-22	ND	ND	ND	ND	0.87 JS0	ND	4.1 JS0

BWB-0540					
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
0-2	ND	ND	ND	8.5	0.024

BWB-0538					
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
2-4	ND	ND	ND	9.1	0.042

BWB-0543					
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
0-2	ND	ND	ND	7.4	0.014

BWB-0539					
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
2-4	ND	ND	ND	13.2	0.074

BWB-0541					
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
0-2	ND	ND	ND	10.1	0.055
2-4	ND	ND	ND	8.8	0.033

BWB-0505						
Depth (ft)	Benzene	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
0-2	0.034	320	540	41 JH6	195 JS0	0.43 JH1
6-8	ND	ND	ND	ND	10.8 JS0	ND
18-20	ND	ND	ND	ND	1.5 JS0	ND

BWB-0544					
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
0-2	ND	ND	ND	8	ND

BWB-0542				
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead
0-2	ND	ND	ND	11.1

BWB-0545					
Depth (ft)	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
0-2	ND	ND	ND	9.4	0.013

BWB-0506						
Depth (ft)	Benzene	2,4-DNT	NNSPH/DPA	NG	Lead	PCBs
4-6	ND	ND	ND	ND	11.2 JS0	ND
14-16	ND	ND	ND	ND	8.7 JS0	ND
18-20	ND	ND	ND	ND	1.6 JS0	ND

NOTES

1. SAMPLE LOCATION NOMENCLATURE: SAMPLE LOCATION NAMES CONSIST OF A THREE LETTER PREFIX (BWB, SIGNIFYING A SOIL BORING IN THE BOX WASH REPAIR AREA) FOLLOWED BY 05##, WHERE 05 SIGNIFIES THE YEAR THE BORING WAS PERFORMED AND ## IS THE UNIQUE LOCATION IDENTIFIER.
2. SHADED VALUE INDICATES COMPOUND CONCENTRATION EXCEEDS U.S. EPA REGION 9 PRELIMINARY REMEDIATION GOAL FOR SOILS. SEE TABLE 13 FOR DETAILS.

LEGEND

- 0514 SOIL BORING
- 0401 OLIN SOIL BORING
- [Shaded Area] ESTIMATED EXTENT OF IMPACTED SOILS

ANALYTES REPORTED IN µg/kg

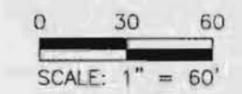
- 2,4-DNT 2,4-DINITROTOLUENE
- 2,6-DNT 2,6-DINITROTOLUENE
- NNSPH/DPA N-NITROSODIPHENYLAMINE/DIPHENYLAMINE

ANALYTES REPORTED IN mg/kg

- BENZENE
- DBA DIBENZ(A,H)ANTHRACENE
- Lead
- NG NITROGLYCERINE
- PCBs POLYCHLORINATED BIPHENYLS
- Zinc

QUALIFIERS

- JH# SAMPLE IS BIASED LOW DUE TO HOLDING TIME EXCEEDANCE WHERE # IS NUMBER OF DAYS THE HOLDING TIME WAS EXCEEDED
- JS# LOW SAMPLE RECOVERY WHERE # IS THE OBSERVED RECOVERY
- ND NOT DETECTED

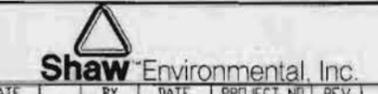


REVISION	DESCRIPTION	CHECKED	APPROVED	DATE
B	ISSUED TO ARMY AND AGENCIES	ABE	DJR	09/08/05
A	ISSUED TO ARMY	ABE	DJR	08/10/05



BADGER ARMY AMMUNITION PLANT

FIGURE NUMBER
3
AREA B
BOX WASH REPAIR AREA
SUBSURFACE SOIL INVESTIGATION



BY	DATE	BY	DATE	PROJECT NO.	REV.	FILE NAME
DISND	ABE	06/10/05	CHKD	ABE	07/19/05	843333.0530
DRAWN	MEC	06/10/05	APPR	DJR	07/19/05	B 3333H01B

WED, SEP 07, 2005 01:31 P MFC O:\BADGER\843333\0530\REV-B\333H01B.DWG



NOTES

1. SAMPLE LOCATION NOMENCLATURE: SAMPLE LOCATION NAMES CONSIST OF A THREE LETTER PREFIX (BWB, SIGNIFYING A SOIL BORING IN THE BOX WASH REPAIR AREA) FOLLOWED BY 05##, WHERE 05 SIGNIFIES THE YEAR THE BORING WAS PERFORMED AND ## IS THE UNIQUE LOCATION IDENTIFIER.
2. SHADED VALUE INDICATES COMPOUND CONCENTRATION EXCEEDS U.S. EPA REGION 9 PRELIMINARY REMEDIATION GOAL FOR SOILS. SEE TABLE 13 FOR DETAILS.

LEGEND

- 0533 SOIL BORING
- ▨ ESTIMATED EXTENT OF IMPACTED SOILS
- 1890-02 BAAAP BUILDING NUMBER

ANALYTES REPORTED IN $\mu\text{g}/\text{kg}$

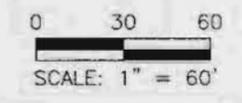
2,4-DNT 2,4-DINITROTOLUENE

ANALYTES REPORTED IN mg/kg

- BZAP BENZO(A)PYRENE
- NG NITROGLYCERINE
- PCBs POLYCHLORINATED BIPHENYLS

QUALIFIERS

- ND NOT DETECTED
- NA NOT ANALYZED



B	ISSUED TO ARMY AND AGENCIES	ABE	DJR	09/08/05
A	ISSUED TO ARMY	ABE	DJR	08/18/05
REVISION	DESCRIPTION	CHECKED	APPROVED	DATE

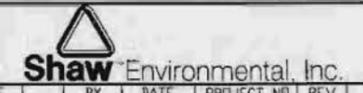


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FIGURE NUMBER
4

**AREAS C AND D
BOX WASH REPAIR AREA
SUBSURFACE SOIL INVESTIGATION**



BY	DATE	BY	DATE	PROJECT NO.	REV.	FILE NAME
USND ABE	06/10/05	CHKD ABE	07/19/05	843333.0530	B	3333H01B
DRAWN MEC	06/10/05	APPR DJR	07/19/05			

**Box Wash Repair Site
Sampling Matrix**

Sampled By	Area A						Area B						Area C						Area D						
	Other Metals	Lead	VOCs	PCBs	NG	BNAs	Other Metals	Lead	VOCs	PCBs	NG	BNAs	Other Metals	Lead	VOCs	PCBs	NG	BNAs	Other Metals	Lead	VOCs	PCBs	NG	BNAs	
Olin (2004)	(not sampled)								4			4	(not sampled)						(not sampled)						
Shaw (2005)	22	12	12	20	12	19	33	42	33	41	41	42	18	18	16	18	18	22	5	5	5	12	5	10	
SpecPro (2006)				16				5	13	13	13	13	(no contamination)									1			
SpecPro (2007)		18		18		18		14	14	14	14	17	(no contamination)									5			4

Notes:

Values represent the number of samples collected for each analysis.

BNAs = base neutral acids, includes DNT

PCBs = polychlorinated biphenyls

NG = nitroglycerin

VOCs = volatile organic compounds

Other Metals = copper, mercury & zinc

Olin (2004) = Site Assessment Report

Shaw (2005) = Draft Subsurface Soil Investigation Report

SpecPro (2006) = Pre-Excavation Soil Borings

SpecPro (2007) = Post-Excavation Soil Sampling

Contaminants of Concern after Investigation Activities were Completed

Area A: Only PCB concentrations were above regulatory values.

Post-excavation sampling for lead & BNAs was conducted because low levels of lead & DNT were found during the investigation.

Area B: Copper, mercury, and zinc were not detected above regulatory values.

Area C: Excavation was not necessary, although the location of the benzo(a)pyrene detection was removed with the Sewer Excavation.

Area D: Only PCB concentrations were above regulatory values.

Post-excavation sampling for BNAs was conducted because low levels of DNT were found during the investigation.